



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1125-5/04a Einstücki	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/011888	International filing date (day/month/year) 25 October 2003 (25.10.2003)	Priority date (day/month/year) 19 December 2002 (19.12.2002)
International Patent Classification (IPC) or national classification and IPC E05B 17/04, 53/00, F16C 1/02		
Applicant HUF HÜLSBECK & FÜRST GMBH & CO. KG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 9 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 14 June 2004 (14.06.2004)	Date of completion of this report 17 January 2005 (17.01.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/011888

I. Basis of the report

1. With regard to the elements of the international application:*

the international application as originally filed
 the description:

pages _____ 1, 3, 5, 6 _____, as originally filed
 pages _____ _____, filed with the demand
 pages _____ 2, 2a, 4, 4a, 7 _____, filed with the letter of _____ 27 August 2004 (27.08.2004)

the claims:

pages _____ _____, as originally filed
 pages _____ _____, as amended (together with any statement under Article 19)
 pages _____ _____, filed with the demand
 pages _____ 1-3 _____, filed with the letter of _____ 27 August 2004 (27.08.2004)

the drawings:

pages _____ 2/3-3/3 _____, as originally filed
 pages _____ _____, filed with the demand
 pages _____ 1/3 _____, filed with the letter of _____ 27 August 2004 (27.08.2004)

the sequence listing part of the description:

pages _____ _____, as originally filed
 pages _____ _____, filed with the demand
 pages _____ _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
 These elements were available or furnished to this Authority in the following language _____ which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
 the language of publication of the international application (under Rule 48.3(b)).
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority in written form.
 furnished subsequently to this Authority in computer readable form.
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, Nos. _____
 the drawings, sheets/fig _____

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP 03/11888

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1 - 3	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 3	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 3	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following documents:

- D1: DE 196 49 905 A
- D2: EP 889 252 A
- D3: NL 6408 413 A
- D4: DE 925 027 C
- D5: US 6 012 494

2. Document D1 is considered the prior art closest to the subject matter of claim 1. It discloses an actuating device according to the preamble of claim 1; cf. locking cylinder 2; lock 4, 7; deformable shaft 5, radial displacement in figure 2.

2.1. The subject matter of claim 1 thus differs essentially from a device according to D1 in that:

- A) the one-piece shaft has a plurality of diametrically opposed pairs of notches;
- B) the pairs of notches permit a web between their flanks that lies in the region of the shaft axis and extends essentially across the entire diameter;

- C) axial connecting pieces that are the width of the full cross section of the shaft are located between each two pairs of notches;
- D) the carrier element for actuating the lock and/or a locking cylinder connector is/are configured in a single piece with the shaft.

2.2. The subject matter of claim 1 is thus novel (PCT Article 33(2)).

3. The invention addresses the problem of developing a cost-effective, reliable device that improves the flexibility of the shaft while providing good transmission of torque (see page 2, paragraph 3).

4. Flexible shafts are versatile in the transmission of motion. Document D2, for example, discloses a shaft that is provided with notches. Suitable uses are not mentioned in this document. Moreover, the shaft has individual notches rather than notch pairs (feature A). Owing to the hollow design in D2, the shaft also lacks the web (feature B) according to the invention.

4.1. Although document D3 discloses a shaft with notches arranged opposite each other in pairs, said shaft is a hollow shaft and, consequently, does not include feature B). Furthermore, D3 relates to intended uses that lie far outside the scope of the field of locks, and it therefore appears doubtful that a person skilled in the art would even take this document into consideration when modifying the lock according to D1.

4.2. Document D4 also relates to a hollow shaft, and even with the aid of this teaching a person skilled in the

art would certainly not arrive at a device that included feature B) without thereby exercising inventive skill.

- 4.3. Document D5 discloses a shaft in figure 3 that is very similar to the shaft according to the invention. However, D5 describes a shaft that is primarily axially stressed for use in medical-technical instruments and devices. Consequently, a person skilled in the art would not take this document into consideration when solving a problem associated with a rotating shaft in the field of locking devices.
- 4.4. Accordingly, a person skilled in the art, proceeding from a device according to D1, would not arrive at the subject matter of claim 1 without thereby exercising inventive skill (PCT Article 33(3)).
5. Claims 2 and 3 are dependent upon claim 1 and thus likewise satisfy the PCT requirements with respect to novelty and inventive step.
6. The invention is industrially applicable in the field of locking devices (PCT Article 33(4)).